

Course Title: *Biological Terrorism and Weapons of Mass Destruction (MSBS 5140)*

Semester Schedule: Fall 2004, class to meet once each week (Mondays) starting 13-September 15:30-17:30 (3:30p-5:30p) in NJDS B-723

Instructors: Nancy Connell, PhD
Brendan McCluskey, MPA
Grant Gallagher, PhD

General goals:

- To gain a knowledge of the history of agents of biological warfare, including political considerations, development, and use, and to relate this information to the potential for tactical/terrorist deployment
- To gain a knowledge of the biology of agents of biological warfare and terrorism, including microbiology, genetics, immunology, identification, diagnosis, and disease
- To gain an appreciation for the overall effects of biological weapons use, including detection and epidemiology, emergency response and management, and psychological impact
- To understand the difficulties in control and non-proliferation, including difficulties in fashioning a verification protocol to the current Biological Weapons Convention

Course structure: The course will meet once a week for 15 weeks (2 hour sessions); during the first class, students will be assigned an agent/disease to focus on during the semester. The first few weeks will consist of lectures/presentations by the instructors and other experts in the field of terrorism, defense, and related areas.

In addition to lectures by the primary instructors and other speakers, students will give a series of presentations (PowerPoint) on their assigned agent/disease: four (4) in total, one (1) covering each of the general goals listed above. **Students will be limited to ten (10) minutes for each presentation, and the time limit will be strictly enforced; part of the student's grade for the presentation will be based on how well the 10 minutes are used.** Students who are not presenting are expected to spend some time surveying the topics for discussion that day, and have questions prepared to ask the student presenter. It would be advisable to have questions written down, as the instructors will call on students to ask questions of the presenter.

In addition, time will be spent during each class going over news and other noteworthy events that have recently occurred; students are expected to read, watch, and listen to news and other sources to gather information to share with the class regarding biological and other forms of terrorism.

Finally, students will attend (at a mutually convenient time and location, to be determined during the first class session) a New Jersey Office of Emergency Management Weapons of Mass Destruction Awareness (Domestic Preparedness) course given by NJSP-certified instructors.

Method of Evaluation: In-class presentations (40%), culminating paper (45%), in-class participation (15%) – all via evaluation by the instructors.

Course Schedule: (subject to change at the discretion of the instructors)

- Class 1 – Introduction, assignment of agents, general overview of terrorism
- Class 2 – History and overview of biological weapons
- Class 3 – General overview of bacterial and toxin agents
- Class 4 – General overview of viral and other (non-biological) agents
- Class 5 – Student presentations (general overview, history of disease)
- Class 6 – Student presentations (general overview, history of disease)
- Class 7 – Regulatory issues for biological agents; Military aspects of Terrorism
- Class 8 – Student presentations (biology of agents)
- Class 9 – Student presentations (biology of agents)
- Class 10 – Preparedness and response to biological agent use
- Class 11 – Student presentations (epidemiology and treatments)
- Class 12 – Student presentations (epidemiology and treatments)
- Class 13 – Protective equipment; Public Health and terrorism
- Class 14 – Student presentations (control and regulation, other issues)
- Class 15 – Student presentations (control and regulation, other issues)

Each class will also have time dedicated for discussion of current events, as well as questions for the student presenters (from the instructors and other class members).

General Outline:

- I. History and Politics of Biological Weapons
 - A. Pre-WWII
 - B. WWII use
 - C. Post-WWII
 - D. Iraq/Sverdlovsk
 - E. Recent History
 - F. Geneva Protocol

- II. Biological Warfare Agents
 - A. Bacteria (anthrax, plague, brucellosis, etc.)
 - B. Viruses (smallpox, hemorrhagic fevers, etc.)
 - C. Toxins/Fungi/Other (ricin, botulism, T-2 mycotoxin, etc.)

- III. Effects of Biological Weapons Use
 - A. Detection
 - B. Emergency Response
 - C. Psychological Impact
 - D. Recovery

- IV. Control of Proliferation
 - A. Biological Weapons Convention
 - B. Verification; 1991-2000
 - C. November 2001
 - D. Chemical Weapons Convention
 - E. Regulation

Biological Agents (for this course)

Bacteria

Anthrax
Brucellosis
Glanders
Tularemia
Plague
Q-fever
E. coli
Cholera
Salmonella
MDR-TB

Viruses

Smallpox
Ebola/Marburg
Dengue
Encephalitis
Influenza
SARS
FMD

Toxins

Ricin
Botulinum
SEB
T-2 Mycotoxins